PLATFORM GUIDE

Notes, Notices, Cautions, and Warnings

Throughout this guide, blocks of text may be accompanied by an icon and printed in bold type or in italic type. These blocks are notes, notices, cautions, and warnings, and they are used as follows:

NOTE: A NOTE indicates important information that helps you make better use of your computer system.

NOTICE: A NOTICE indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

CAUTION: A CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.
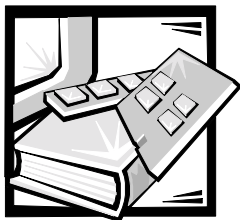
WARNING: A WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious bodily injury.

Dell™ PowerEdge™ Cluster FE100/FL100 Platform Guide

This guide provides the latest information on using Microsoft® Windows NT® Server 4.0, Enterprise Edition operating system and Windows® 2000 Advanced Server operating system for the following Dell PowerEdge Cluster FE100/FL100 products and components:

- PowerEdge Cluster FE100

    — Supported servers: PowerEdge 2400, 2450, 4300, 4350, 4400, 6100, 6300, 6350, 6400, 6450, and 8450

    — Storage system: Dell PowerVault™ 65*x*F

    — Cluster interconnect: Intel® PRO/100+ Fast Ethernet controller, which can be a peripheral component interconnect (PCI) card or an integrated controller, if available

- PowerEdge Cluster FL100

    — Supported servers: PowerEdge 2400, 2450, 4300, 4350, 4400, 6100, 6300, 6350, 6400, 6450, and 8450

    — Storage system: PowerVault 65*x*F

    — Cluster interconnect: Giganet cluster local area network (cLAN) high performance, low-latency host adapter

See the section related to your cluster product for more information on supported configurations. See also the *Dell PowerEdge Cluster FE100/FL100 Installation and Troubleshooting Guide* for a detailed list of related documentation.

NOTE: Configurations not listed in this document are not certified or supported by Dell or Microsoft.

Windows NT 4.0 Server, Enterprise Edition

The PowerEdge Cluster FE100 and FL100 support clustering on Windows NT Server 4.0, Enterprise Edition. See the following sections for information on supported configurations and service packs. See also the *Dell PowerEdge Cluster FE100/ FL100 Installation and Troubleshooting Guide* for installation instructions for hardware configurations using Windows NT Server 4.0, Enterprise Edition.

PowerEdge Cluster FE100/FL100 Homogeneous Configurations

Your PowerEdge Cluster FE100/FL100 system supports the following PowerEdge servers as cluster nodes in homogeneous pairs (same server) on Windows NT 4.0, Enterprise Edition:

- PowerEdge 2400-2400
- PowerEdge 2450-2450
- PowerEdge 4300-4300
- PowerEdge 4350-4350
- PowerEdge 4400-4400
- PowerEdge 6300-6300
- PowerEdge 6350-6350
- PowerEdge 6400-6400
- PowerEdge 6450-6450
- PowerEdge 8450-8450

PowerEdge Cluster FE100/FL100 Heterogeneous Configurations

Your PowerEdge Cluster FE100/FL100 system supports the following PowerEdge servers as cluster nodes in heterogeneous pairs (mixed server models) with Windows NT 4.0, Enterprise Edition:

- PowerEdge 2400-4300
- PowerEdge 2450-4350
- PowerEdge 4400-2400
- PowerEdge 4400-4300
- PowerEdge 6300-4300
- PowerEdge 6300-6100
- PowerEdge 6350-4350
- PowerEdge 6400-4400
- PowerEdge 6400-6300

- PowerEdge 6450-6350

- PowerEdge 8450-6350

- PowerEdge 8450-6450

NOTE: Both nodes must be configured with identical operating systems and service packs, similar drivers (network interface controllers [NICs], Fibre Channel host bus adapter [HBAs], and so on), utilities (Dell OpenManage™ system management software, and so on), and Fibre Channel HBA basic input/output system (BIOS).

Support for QLogic HBAs on Windows NT

Table 1 lists the QLogic HBAs and the PowerEdge servers on which they are supported for Windows NT cluster configurations. For PCI slot recommendations, see the section for your server model on adding peripherals required for cluster nodes, found later in this document.

Table 1. QLogic HBAs Supported for Windows NT

	PowerEdge Servers	2400	2450	4300/ 4350	4400	6100	6300/ 6350	6400/ 6450	8450
QLogic HBAs	QLA-2100/ 33-MHz			x		x	x		
	QLA-2200/ 33-MHz	x	x	x	x		x	x	x
	QLA-2200/ 66-MHz				x			x	x

NOTE: All QLogic HBAs used in the cluster nodes must be the same model.

The supported drivers for the QLogic HBAs in Windows NT configurations are as follows:

- For QLA-2100/ 33-MHz, version 7.04.08 or later

- For QLA-2200/ 33-MHz, version 7.04.08 or later

- For QLA-2200/ 66-MHz, version 7.04.08 or later

You can download the latest drivers from the Dell Web site at **http://www.dell.com**.

Windows NT 4.0 Service Pack Support

Windows NT Service Pack 6a or later is recommended for PowerEdge Cluster FE100/ FL100 systems.

Windows 2000 Advanced Server

The PowerEdge Cluster FE100 and FL100 support clustering on Windows 2000 Advanced Server. See the following sections for information on supported configurations and service packs. See also the *Dell PowerEdge Cluster FE100/FL100 Installation and Troubleshooting Guide* for installation instructions for hardware configurations using Windows 2000 Advanced Server.

PowerEdge Cluster FE100/FL100 Homogeneous Configurations

Your PowerEdge Cluster FE100/FL100 configuration supports the following PowerEdge servers as cluster nodes in homogeneous pairs (same server) with Windows 2000 Advanced Server:

- PowerEdge 2400-2400
- PowerEdge 2450-2450
- PowerEdge 4300-4300
- PowerEdge 4350-4350
- PowerEdge 4400-4400
- PowerEdge 6300-6300
- PowerEdge 6350-6350
- PowerEdge 6400-6400
- PowerEdge 6450-6450
- PowerEdge 8450-8450

NOTE: Heterogeneous server clusters (mixed server models) are not supported with PowerEdge Cluster FE100/FL100 configurations running Windows 2000 Advanced Server.

Support for Qlogic HBAs on Windows 2000

Table 2 lists the QLogic HBAs and the PowerEdge servers on which they are supported for Windows 2000 cluster configurations. For PCI slot recommendations, see the section for your server model on adding peripherals required for cluster nodes, found later in this document.

Table 2. QLogic HBAs Supported for Windows 2000

	PowerEdge Servers	2400	2450	4300/ 4350	4400	6300/ 6350	6400/ 6450	8450
QLogic HBAs	QLA-2100/ 33-MHz			x		x		
	QLA-2200/ 33-MHz	x	x	x	x	x	x	x
	QLA-2200/ 66-MHz				x		x	x

NOTE: All QLogic HBAs used in the cluster nodes must be the same model.

The supported drivers for the QLogic HBAs in Windows 2000 configurations are as follows:

- For QLA-2100/ 33-MHz, version 7.04.08 or later
- For QLA-2200/ 33-MHz, version 7.04.08 or later
- For QLA-2200/ 66-MHz, version 7.04.08 or later

You can download the latest drivers from the Dell Web site at **http://www.dell.com**.

Windows 2000 Service Pack Support

No service pack is required at this time.

Guidelines for Adding Peripherals for PowerEdge Cluster Configurations

The following sections describe adding peripherals for PowerEdge 2400, 2450, 4300, 4350, 4400, 6100, 6300, 6350, and 8450 cluster nodes.

WARNING: Hardware installation should be performed only by trained service technicians. Before working inside the computer system, see the safety instructions in your PowerEdge system documentation to avoid a situation that could cause serious injury or death.

Peripherals for PowerEdge 2400 Cluster Nodes

The following list provides PCI slot assignment information for the system's PCI buses, HBAs, and the Dell OpenManage Remote Assistant Card 2 (DRAC 2).

- PCI buses
  - PCI bus 0: PCI slots 1 through 5 are 64-bit, 33-MHz.
  - PCI bus 1: PCI slot 6 is 32-bit, 33-MHz.
- HBAs
  - Dell recommends installing the HBAs on separate PCI buses to balance the load on the system.
- DRAC 2
  - If you are currently using a DRAC 2 or plan to use one in the future, install it in PCI slot 6.

Peripherals for PowerEdge 2450 Cluster Nodes

The following list provides PCI slot assignment information for the system's PCI buses and HBAs.

- PCI buses
  - PCI bus 0: PCI slots 1 through 3 are 32-bit, 33-MHz.
- HBAs
  - You can install HBAs in any available PCI slot.

Peripherals for PowerEdge 4300/4350 Cluster Nodes

The following list provides PCI slot assignment information for the system's PCI buses, HBAs, and the DRAC 2.

- PCI buses
    - PCI bus 0: PCI slots 1 through 4 are 32-bit, 33-MHz slots.
    - PCI bus 1: PCI slots 5 and 6 are 32-bit, 33-MHz slots.

- HBAs
    - Dell recommends installing the HBAs on separate PCI buses to balance the load on the system.

- DRAC 2
    - If you are currently using a DRAC 2 or plan to use one in the future, install it in PCI slot 4.

Peripherals for PowerEdge 4400 Cluster Nodes

The following list provides PCI slot assignment information for the systems's PCI buses, HBAs, and the DRAC 2.

- PCI buses
    - PCI bus 0: PCI slots 1 and 2 are 64-bit, 33/66-MHz.
    - PCI bus 1: PCI slots 3 through 6 are 64-bit, 33-MHz.
    - PCI bus 2: PCI slot 7 is 32-bit, 33-MHz.

- HBAs
    - Dell recommends installing the HBAs on separate PCI buses (PCI buses 1 and 2) to balance the load on the system.

- DRAC 2
    - If you are currently using a DRAC 2 or plan to use one in the future, install it in PCI slot 7.

Peripherals for PowerEdge 6100 Cluster Nodes

The following list provides PCI slot assignment information for the system's PCI buses and HBAs.

- PCI buses
  - PCI bus 0: PCI slots 1 through 3 are 32-bit, 33-MHz slots.
  - PCI bus 1: PCI slots 4 through 6 are 32-bit, 33-MHz slots.

- HBAs
  - Dell recommends installing the HBAs on separate PCI buses to balance the load on the system.

Peripherals for PowerEdge 6300 and 6350 Cluster Nodes

The following list provides PCI slot assignment information for the system's PCI buses, HBAs, and the DRAC 2.

- PCI buses
  - PCI bus 0: PCI slots 1 through 3 are 32-bit, 33-MHz.
  - PCI bus 1: PCI slots 4 through 7 are 64-bit, 33-MHz.

- HBAs
  - Dell recommends installing the HBAs on separate PCI buses to balance the load on the system.

- DRAC 2
  - If you are currently using a DRAC 2 or plan to use one in the future, install it in PCI slot 3.

Peripherals for PowerEdge 6400 and 6450 Cluster Nodes

The following list provides PCI slot assignment information for the system's PCI buses, HBAs, and the DRAC 2.

- PCI buses
  - PCI bus 0: PCI slot 1 is 32-bit, 33-MHz.
  - PCI bus 1: PCI slots 2 through 5 are 64-bit, 33-MHz.
  - PCI bus 2: PCI slots 6 and 7 are 64-bit, 33/66-MHz.

- HBAs
  - Dell recommends installing the HBAs on separate PCI buses (PCI buses 2 and 3) to balance the load on the system.

- DRAC 2

    — If you are currently using a DRAC 2 or plan to use one in the future, install it in PCI slot 1.

Peripherals for PowerEdge 8450 Cluster Nodes

The following list provides PCI slot assignment information for the system's PCI buses, RAID controllers, HBAs, and the DRAC 2.

- PCI buses

    — PCI bus 0: PCI slot 1 and 2 are 64-bit, 33-MHz.

    — PCI bus 1: PCI slots 3 through 6 are 64-bit, 33-MHz.

    — PCI bus 2: PCI slots 7 and 8 are 64-bit, 33/66-MHz.

    — PCI bus 3: PCI slots 9 and 10 are 64-bit, 33/66-MHz.

- RAID controllers

    — Install the RAID controller for the server's internal drives in PCI slot 1.

- HBAs

    — Dell recommends installing the HBAs on separate PCI buses (PCI buses 2 and 3) to balance the load on the system.

- DRAC 2

    — If you are currently using a DRAC 2 or plan to use one in the future, install it in PCI slot 2.